

H. C. BROWN.
VISE.

No. 15,277.

PATENTED JULY 8, 1856.

Fig. 2.

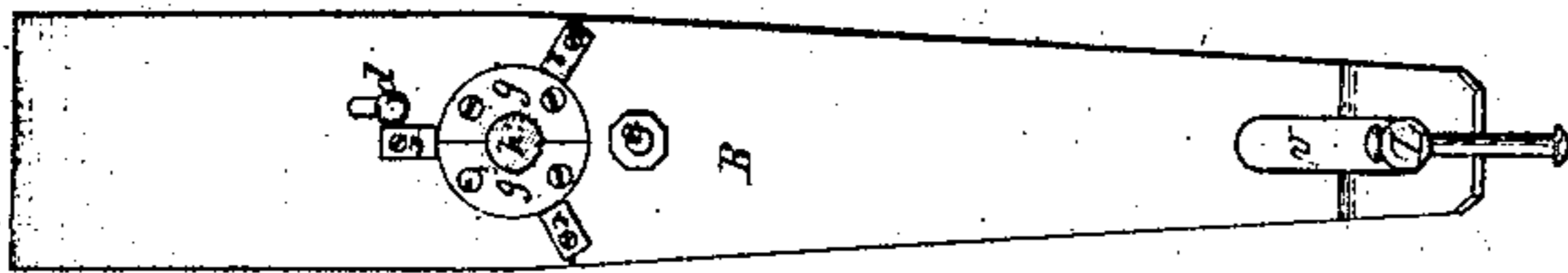


Fig. 3.

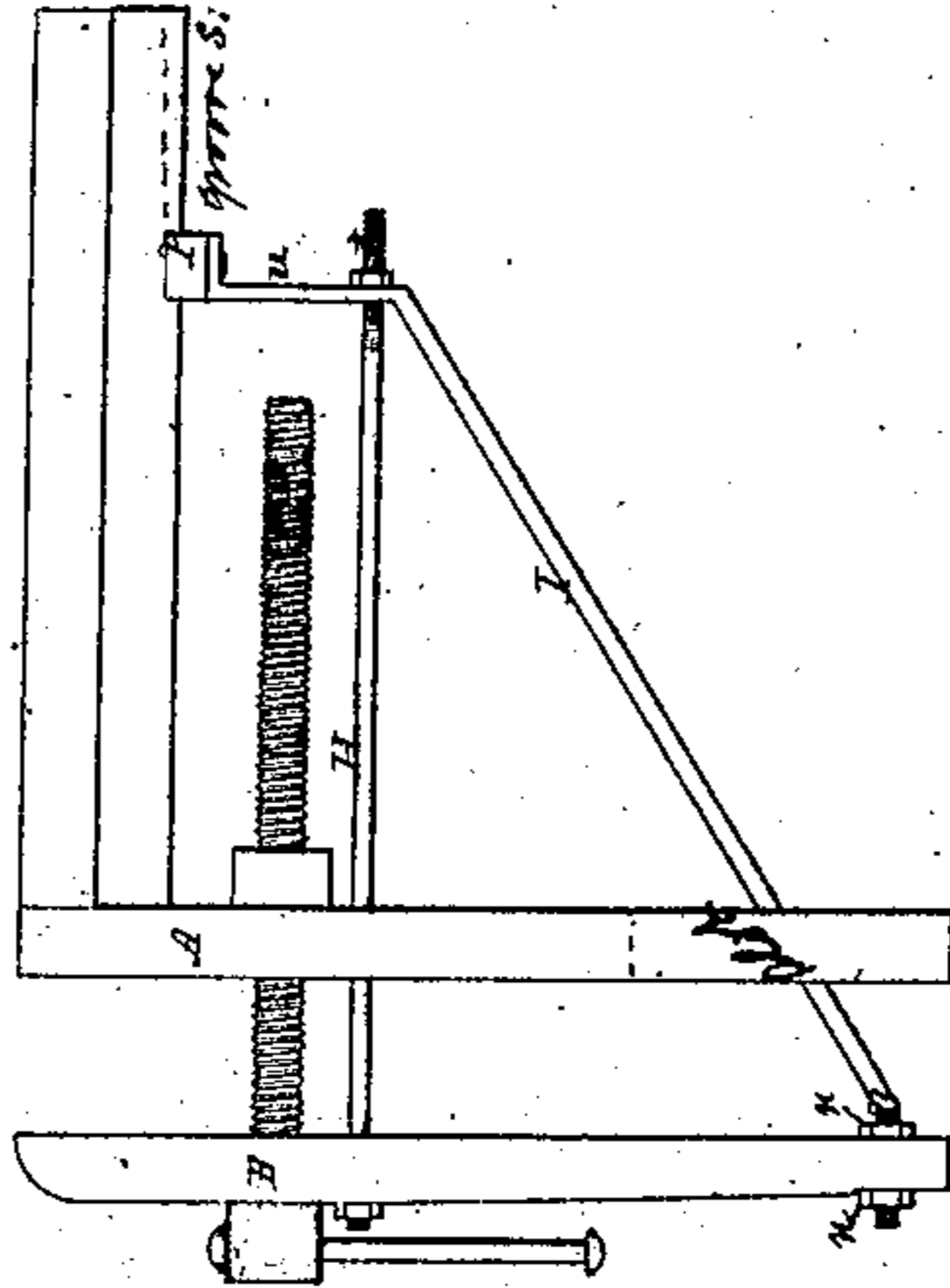
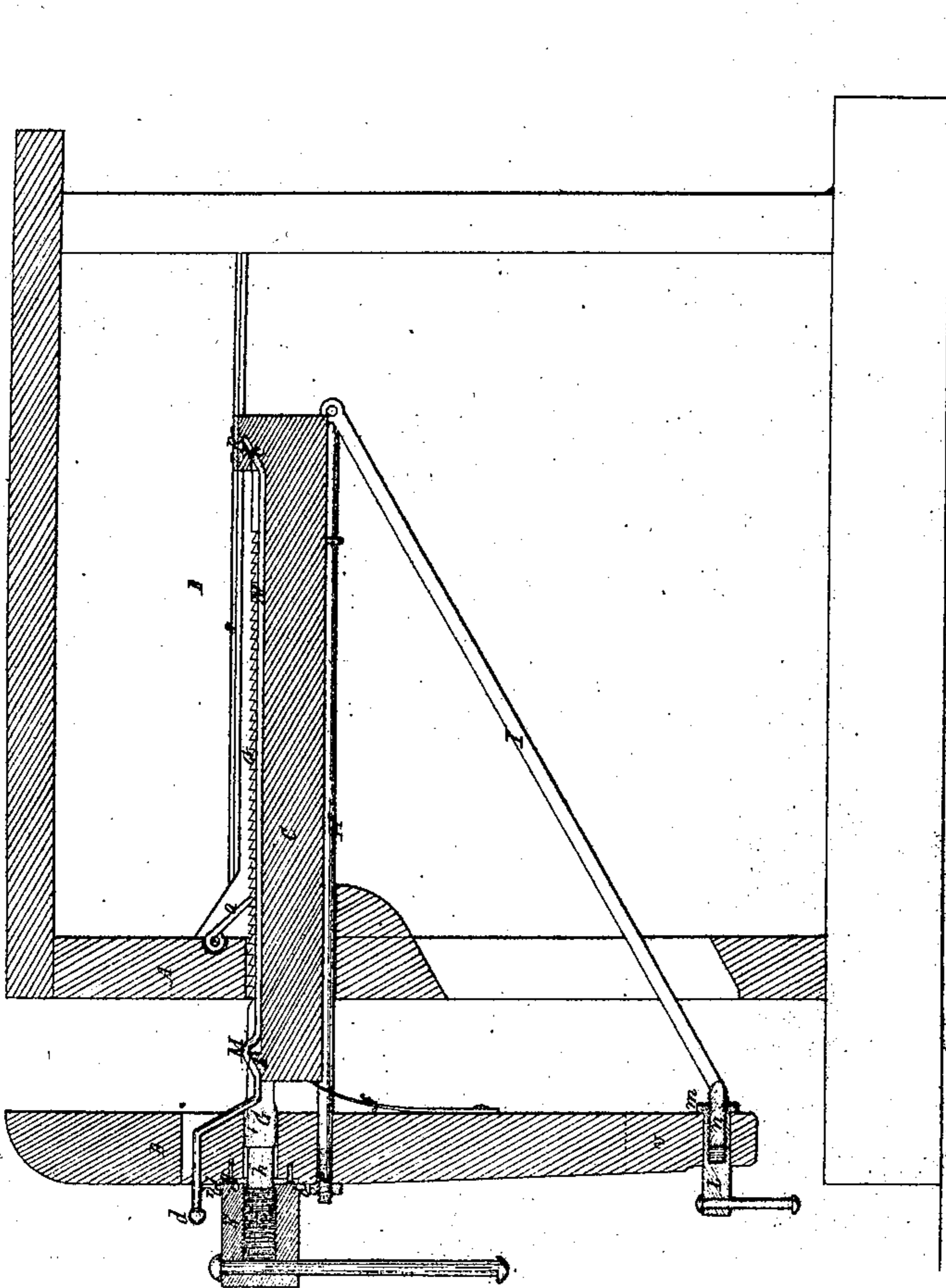


Fig. 1.



UNITED STATES PATENT OFFICE.

HIRAM C. BROWN, OF YELLOW SPRINGS, OHIO.

WISE.

Specification of Letters Patent No. 15,277, dated July 8, 1856.

To all whom it may concern:

Be it known that I, H. C. BROWN, of Yellow Springs, in the county of Greene and State of Ohio, have invented a new and
5 Improved Adjustable Parallel Vise; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification, Figure 1
10 being a vertical section showing all the parts of the vise in their positions; Fig. 2, a front view of the movable jaw, the tightening nut being removed.

Like letters designate corresponding parts
15 in both figures.

My improvements have reference to facilitating the operation of a sliding ratch-beam; to a convenient mode of tightening the jaws against the article clamped; and
20 to a peculiar mode of keeping the jaws parallel, and by the same means to adjust the parallelism and increase the gripping power of the vise.

I employ a sliding beam C, provided with
25 a ratch G, which is held by a pawl *a*, for the purpose of allowing the movable jaw B, to be pushed in, or drawn out, to suit the size of the articles to be clamped, afterward only requiring the jaws to be tightened
30 against the articles. The main portion of the sliding beam, may be made of wood so that a comparatively small ratch bar will suffice. The rear extremity of the beam may embrace the lower edge of a guide piece D;
35 and in order to hold it up to said guide piece, a small plate *p* or its equivalent may be secured to the beam and slide in a groove *s*, in the side of the guide piece, as shown in Fig. 1.

40 To lift the pawl *a*, in the most convenient manner, I employ the following device:—A rod M is situated upon the top of the sliding beam and close to one side of the ratch G, and under the pawl *a*, which is
45 wide enough to extend over it. It passes through both jaws, so that the outer end *d*, may be readily reached by the hand, when the outer jaw is to be moved. The rear end *c*, is bent upward and enters an inclined
50 hole in the rear end of the sliding beam; while an inclined bend near the front end, rests upon a wedge projection *b*, on the top of said sliding beam, as represented in Fig. 1. Thus by pushing back the rod endwise,
55 the bent portions of the rod ascend the inclined projection and hole of the sliding

beam, and raise both ends of said rod equally and simultaneously; and consequently lift the pawl out of the notches of the ratch, and set the sliding beam free. 60 When left free, the rod will slide down to its lowest position again by its own weight and allow the pawl again to enter the notches of the ratch.

In order to tighten the jaws against the
65 articles, after having been brought into contact therewith by sliding the beam, a nut E, is employed, and is provided with the ordinary winch handle to turn it. The rounded end *i* of the ratch bar has a screw thread
70 cut upon it, to fit the nut, as represented. Back of this screw portion, is cut a neck *h* of smaller diameter than the bar at either end thereof, and of sufficient length to allow the extent of tightening movement desired
75 to be given to the movable jaw. A thin collar, composed of two halves *g g*, (Fig. 2,) is secured in a circular recess in the side of the jaw, and fitting closely around the neck
80 *h*, prevents the movement of the jaw upon the ratch bar farther than the shoulders at the ends of the neck will permit, and thereby inseparably connecting the ratch bar and movable jaw. The nut E, is held in con-
85 tinual contact with the side of the jaw, by small hook projections, or clips, *r r* (or any equivalent means,) secured to the jaw, and reaching over a flange *l* on the inner end of the nut.

A brace rod I, extending from the lower
90 end of the movable jaw to the rear end of the sliding beam, serves to keep the jaws parallel. And in order to adjust the jaws to exact parallelism, or to vary them slightly therefrom, the lower end of the rod is pro-
95 vided with a screw thread, on which a nut L turns. Said nut has a flange *m* on its inner end and the outer projecting end is provided with a winch handle, so that it may be used for auxiliary tightening, in instances
100 where the principal tightening nut is not found to possess sufficient power. This offers a great advantage, since the effect of a screw of the same power, at the lower end of the jaw, is usually three or four times as
105 great as when applied on the ratch bar. The upper end of the brace rod is jointed to the rear end of a horizontal rod H, which extends along the under side of the sliding beam C, and passes freely through both jaws
110 of the vise. The front end of this rod is provided with a screw thread *e* on which a

nut is screwed outside of the movable jaw, as represented. The rod slides freely under the sliding beam, fitting into a shallow groove in the under side of said beam, or passing through a loop, or staple, driven into it, in order to keep the rod securely in its proper place. When the lower nut L, is turned to adjust the jaws to the proper parallelism, the nut on this rod H, should also be turned, so as to keep it in contact with the jaw, and keep the jaws in the position given by the adjusting nut L. The jaws may also be adjusted parallel with each other, or to any angle therefrom, by simply adjusting the nut on the rod H. The jaws may also be adjusted by moving the lower end of the brace rod up and down in a slot *v*, in the lower end of the movable jaw, and securing it in any desired position therein by nuts and screws, or pins, or other convenient means. This rod is of great consequence in allowing the movable jaw B, to be moved any distance by the nut E within the limits allowed by the neck *h*, without disturbing the parallelism, or relative positions of the jaws, when once set. Without it, all the movement of the movable jaw, in the act of tightening, just so much changes the relative positions or directions of the two jaws.

Fig. 3, represents a modification, showing how the brace rod I, and rod H, may be applied to the ordinary screw vise, and thus secure the advantages of an adjustable par-

allel vise, with the means of auxiliary tightening, by little additional expense. In this case, the brace rod extends up to the guide piece, and the rod H passes through its upper position and is held there by a screw and nut, or any other convenient means. To adjust the jaws, the lower end of the brace rod may move up and down in a slot in the lower end of the movable jaw, and held in any part thereof, by nuts *n n*, as represented.

What I claim as my invention and desire to secure by Letters Patent is—

1. The rod M, arranged and operating so that, by pushing it back endwise, both ends will be simultaneously raised, and thereby lift the pawl *a* from any part of the ratch.

2. I also claim adjusting and retaining the jaws parallel with each other or to any desired angle, either by varying the length of the brace rod, between its points of contact at the top and on the movable jaw, or by varying the position of the lower point of contact, substantially in the manner described.

3. I also claim the use of the adjustable sliding rod H, arranged and operating in connection with the brace rod I, substantially in the manner and for the purposes herein set forth.

HIRAM C. BROWN.

Witnesses:

R. T. OSGOOD,
J. S. BROWN.